

ICF International / Laboratory Data Consultants

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MEMORANDUM

TO:

Chris Lichens, Remedial Project Manager

Site Cleanup Section 4, SFD-7-4

THROUGH:

Rose Fong, ESAT Task Order Manager (TOM)

Quality Assurance (QA) Program, MTS-3

FROM:

Doug Lindelof, Data Review Task Manager

Region 9 Environmental Services Assistance Team (ESAT)

ESAT Contract No.: EP-W-06-041

Technical Direction Form No.: 00105041 Amendment 7

DATE:

January 9, 2008

SUBJECT:

Review of Analytical Data, Tier 2

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

Site:

Omega Chem OU2

Site Account No.:

09 BC LA02

CERCLIS ID No.:

CAD042245001

Case No.:

Not Provided

SDG No.:

06-1781

Laboratory:

Applied Physics & Chemistry Laboratory (APCL)

Analysis:

1,2,3-Trichloropropane (1,2,3-TCP) and n-

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Nitrosodimethylamine (NDMA)

Samples:

8 Water Samples (see Case Summary)

Collection Date:

March 15, 2006

Reviewer:

Santiago Lee, ESAT/Laboratory Data Consultants (LDC)

This report has been reviewed by the EPA TOM for the ESAT contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

SAMPLING ISSUES: [] Yes

[X] No

Data Validation Report - Tier 2

Case No.: Not Provided SDG No.: 06-1781

Site: Omega Chem OU2

Laboratory: APCL

Reviewer: Santiago Lee, ESAT/LDC

Date: January 9, 2008

I. CASE SUMMARY

Sample Information

SDG 06-1781 Samples: OC2-MW23D-W-5-196, OC2-MW23D-W-4-197,

OC2-MW15-W-0-198, OC2-MW15-W-1-199, OC2-MW15-W-2-200, OC2-MW13B-W-0-201, OC2-MW13B-W-3-202, and OC2-MW12-W-0-203

Concentration and Matrix: Low Concentration Water

Analysis: 1,2,3-TCP (GC) and NDMA (GC/MS/MS CI)

Method: EPA Methods 504.1 and 1625

Collection Date: March 15, 2006 Sample Receipt Date: March 15, 2006

> Extraction Date: March 16 through 20, 2006 Analysis Date: March 15 through 23, 2006

Field QC

Field Blanks (FB): OC2-MW15-W-2-200 Trip Blanks (TB): OC2-MW23D-W-4-197

Equipment Blanks (EB): OC2-MW13B-W-3-202

Background Samples (BG): Not Provided

Field Duplicates (D1): OC2-MW15-W-0-198 and OC2-MW15-W-1-199

Laboratory QC

Method Blanks & Associated Samples: Not Provided

Tables

1B: Data Qualifier Definitions for Organic Data Review

Sampling Issues

None.

Additional Comments

As directed by the EPA TOM, a Tier 2 data review was performed (review all QC results and calibrations, minus calculation check). A Table 1A is not requested.

The raw data for NDMA and 1,2,3-TCP analyses are not provided. Only sample results, QC summaries, batch QC reports, and sample chromatograms and quantitation reports are provided for review.

For the NDMA analysis, decafluorotriphenylphosphine (DFTPP) was not analyzed. Since NDMA is analyzed by the chemical ionization (CI) technique, no adverse effect is expected.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 901, Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Volatile and Semivolatile Data Packages;
- ESAT Region 9 Standard Operating Procedure 902, Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Pesticide/PCB Data Packages;
- EPA Method 504.1, 1,2-Dibromoethane (EDB), 1,2-Dibromo-3-chloro-propane (DBCP), and 1,2,3-Trichloropropane (123TCP) in Water by Microextraction and Gas Chromatography, Revision 1.1, 1995;
- EPA Method 1625C, Semivolatile Organic Compounds by Isotope dilution GC/MS, June 1989; and
- USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, October 1999.

II. VALIDATION SUMMARY

The data were evaluated based on the following parameters:

	Parameter		Acceptable	Comment
1.	Holding Time/Preservation		Yes	
2.	GC/MS and GC Performance		· N/A	
3.	Initial Calibration		N/A	
4.	Continuing Calibration		Yes	
5.	Laboratory Blanks		Yes	
6.	Field Blanks (for 1,2,3-TCP only)		Yes	
7.	Surrogate (Method 504.1)		Yes	
8.	Labeled Compound (Method 1625)		No	C
9.	Matrix Spike/Matrix Spike Duplicates		Yes	
10.	Laboratory Control Samples/Duplicates		Yes	
11.	Internal Standard		Yes	
12.	Compound Identification		N/A	
13.	Compound Quantitation		No	A, B
14.	System Performance	1	N/A	
15.	Field Duplicate Sample Analysis		Yes	

N/A = Not Applicable

III. VALIDITY AND COMMENTS

A. The following detected results are qualified as estimated and should be flagged "J".

• NDMA in samples OC2-MW15-W-0-198, OC2-MW15-W-1-199, and OC2-MW12-W-0-203 (below the practical quantitation limit)

Results below the practical quantitation limits (PQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

- B. The laboratory reported the NDMA sample practical quantitation limit (PQL) as 0.002 ug/L. However, signal to noise (S/N) ratios and areas for NDMA detected results are relatively low. For example, the S/N ratio is only 13 and the area is only 1649 for the concentration of 0.003 ug/L in sample OC2-MW15-W-0-198 (lab sample ID 1781-4; see attached quantitation report). In the reviewer's professional judgment, the sample PQL should be raised to 0.02 ug/L. Non-detected sample results should be reported as 0.02U.
- C. For the NDMA analysis, the laboratory did not spike the samples and method blanks with a labeled compound (i.e., surrogate; see Method 1625C Sections 6.8, 10.2.1.3, and 10.2.3.2 and Figure 4). Consequently, the extraction efficiency (surrogate recovery) for NDMA cannot be evaluated. The NDMA-d6 spiked by the laboratory was used as an internal standard.

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR ORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared according to the document, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," October 1999.

- U The analyte was analyzed for but was not detected above the reported sample quantitation limit.
- L Indicates results which fall below the Contract Required Quantitation Limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.
- J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Print Date: 23 Mar 2006 09:43:24

Target Compound #2 from 1781-4 f=0.001.sms

Sample ID: **Acquisition Date:** 1781-4 f=0.001 3/23/2006 2:21 AM Last Calibration: Calculation Date: 2/21/2006 1:18 PM 3/23/2006 9:43 AM

Method: Volume: c:\... \ndma005.mth

3.0000

Vial: Multiplier: 32

Data File:

c:\data\2006\06g1380\1781-4 f=0.001.sms

1.000000

Compound Information

Peak Name: Result Index: N-Nitrosodimethylamine

CAS Number: 62-75-9

Identified

Identification

Parameter Search Type Retention Time

Specification Retention Time

Compound Number: 2

Actual

Status

6.385 +/- 0.300 Match Result

6.432 min. N/A

Pass

Integration and Quantitation

Parameter Quan Ions IS Peak Name Specification 75

Actual

Status

Calibration Equation S/N Ratio

NDMA-D6 Linear, Force, None

y = +0.7286x

Peak Detection Slope Sensitivity Peak Width

Normal 20 20.00 sec Normal

4.9 sec

Baseline Type **Tangent Percent**

10% >=100

1649

Pass

Area Height

0%

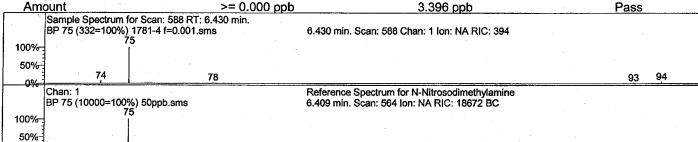
6.1

316

Pass

6.6

minutes

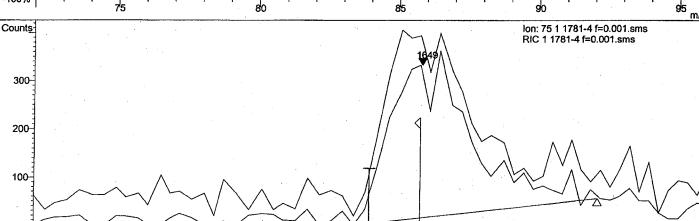


Sample Spectrum for Scan: 588 RT: 6.430 min. - Chan: 1 Diff 6.430 min. Scan: 588 Chan: 1 Ion: NA RIC: 394 Normalized Reference Spectrum for N-Nitrosodimethylamine 100% 50%

6!3

-50% -100% 75 80

6.2



6.4

6.5